ENVIRONMENTAL HOT TOPICS

By Curt Gooch & Karl Czymmek

Recent exemptions and study results will drive dairies' reporting of regulated air emissions

Dairy air emissions update

On the heels of learning the water quality requirements for animal agriculture in early 2000s, farmers were faced with determining how to comply with regulated air emissions from the late 2003 to 2005.

After some initial confusion and incomplete information, key parts of the dairy industry evaluated the situation and more than 600 U.S. dairy farmers voluntarily signed the Air Compliance Agreement with the U.S. Environmental Protection Agency (EPA).

Among the terms and conditions of this agreement, EPA agreed not to sue participating farms for alleged violations of air emissions regulations if the dairy industry funded research to measure air emissions. (The swine and poultry industries also participated.)

The research, conducted by a third party, would measure regulated air emissions from housing facilities and long-term manure storages. The emissions regulated by Federal Clean Air laws include ammonia (NH_3), hydrogen sulfide (H_2S), volatile organic compounds (VOCs) and particulate matter (TSP, PM_{10} and $PM_{2.5}$). The monitoring effort was later named the National Air Emissions Monitoring Study (NAEMS).

Two major goals of the study included providing:

- EPA with data to develop sound, science-based emission estimation methodologies (EEMs) for animal agriculture's regulated emissions.
- A means by which all dairy farmers can reliably estimate their farm's emissions, determine if they fall into one or more regulated categories and take the necessary compliance steps. This can potentially reduce the risk of lawsuits for alleged noncompliance.

Once developed and released by EPA, the EEMs will be the recognized method for all dairy farmers and their advisers to determine if the dairy's regulated emissions exceed thresholds for reporting, additional permitting and possibly control.

FYI

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The study

In 2006 the EPA approved the selection of six representative dairy farms for the two-year monitoring study. Researchers monitored relevant barn, corral and manure storage air emissions at each site beginning in the summer and fall of 2007. They also collected other pertinent farm data such as feed intake, milk yield and composition, and management group populations.

Monitored dairies were located in California, Indiana, New York, Texas, Washington State and Wisconsin. Three of the dairies had mechanically-ventilated barns, two had naturally ventilated barns and the one in Texas was an open lot corral. Purdue University led the overall study, working with scientists and engineers from local land-grant universities.

Nine dairy research reports, with all data collected from each site, were delivered to EPA in July 2010. On Jan. 13, 2011, the research reports were posted at: http://www.epa.gov/airquality/agmonitoring/index.html.

The data suggests that dairy emissions are lower overall than expected, but final data results won't be available until after further EPA review.

What's next?

Within 18 months of receiving the research reports, EPA is required by the Air Compliance Agreement to develop EEMs for each species from the study data and possibly from other available data that meets strict quality control requirements.

As the draft EEMs are completed, EPA will post them on its website for public review and comment. The Federal Register will announce their availability once posted.

EPA is scheduled to release the final EEMs for all species simultaneously by June 2012. After that, what producers are required to do depends upon whether they signed the agreement or not. (See What's a producer to do now?)

At the end of the day, the EEMs will be deemed the standard method for dairy producers to estimate their regulated emissions. As a result, farms will be more assured they are covered in their air emission obligations.

Watch for updates on EPA's release of the EEMs at the PRO-DAIRY facility's website. (See FYI.) ❐

EPA issues administrative reporting exemption for some farms

At the onset of the Air Compliance Agreement in 2005, federal law through the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 103 and the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 304 required emitters, including farms, to report NH_3 and H_2S emissions if 100 lbs. or more of either or both were emitted in any given 24-hour period.

That changed in January 2009. At that time, EPA issued a CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste at Farms. It has two points important to dairies:

1. They and other livestock farms are exempt from the CERCLA Section 103 reporting requirements.

2. It also exempts farms with fewer than 700 mature cows or 1,000 other dairy cattle that emit 100 lbs. or more in any given 24-hour period to the air of animal waste-derived NH_3 or H_2S.

Under EPCRA, a confinement operation at or greater than these CAFO-permit thresholds must submit reports to the appropriate state and local officials if its emission(s) exceed the reporting threshold value.

What's a producer to do now?

The answer to that question depends on whether or not you're participating in the EPA Air Compliance Agreement.

■ **If you signed the agreement:** The legal coverage it provides is still in force, and nothing needs to be done at this time.

Once EPA releases the final EEMs, scheduled for June 2012, those producers who signed the agreement have 60 days to use the EEMs and certify to EPA in writing that their farm does not trigger emission reporting thresholds. If they do trigger reporting, producers have 120 days from issuance of the EEMs to comply with the Emergency Planning and Community Right-to-Know Act (EPCRA) reporting requirements.

If the output shows no reporting is required, the dairy must inform EPA that the EEMs have been used, and it is not required to report.

Depending on the outcome of the data review, participating dairies may have further obligations to meet. They should consult the agreement.

The agreement also requires participating producers to mitigate volatile organic compounds (VOC) and particulate matter (PM) emissions if they exceed Clean Air Act threshold values. Those are 250 tons annually for areas with clean air and 100 tons annually, or significantly less, for air sheds with poorer air quality.

Preliminary review of the NAEMS data set suggests most dairies will not need to be concerned with this requirement.

■ I**f you did not sign the agreement and you are a large CAFO**: Nonparticipating dairies would be wise to use the existing methods to estimate their emissions to determine their obligations.

The Dairy Ammonia Loss Estimation Worksheet posted on the PRO-DAIRY facilities program website can be used at this time to estimate ammonia emissions and determine if reports need to filed with the local and state authorities.

The EEMs will supersede the PRO-DAIRY on-line tool once they're released next year. If after using the worksheet a dairy chooses to report emissions, our on-line EPA-EPCRA Continuous Release Report can be downloaded. Simply complete the forms, print them and mail them to the appropriate authorities.

Save a copy of the estimation tool results and completed forms for your records.

What about hydrogen sulfide reporting? Until the release of the NAEMS study reports, very little information about H_2S emissions was available for use in determining a good faith estimate of a farm's H_2S emissions.

It has been our position that only the largest of large dairies may emit 100 lbs. or more of H_2S in a 24-hour period. Therefore, they didn't need to be concerned about reporting. A preliminary review of the raw NAEMS dairy data recently released by EPA supports this position.